

**Before the  
FEDERAL COMMUNICATIONS COMMISSION**

<b>In the Matter of Schools and Libraries Universal Service Support Mechanism</b>	) ) ) ) ) )	<b>CC Docket No. 02-6</b>
<b>A National Broadband Plan For Our Future</b>	) )	<b>GN Docket No. 09-51</b>

**Reply Comments of Internet2 K20 Initiative**

The Internet2 K20 Initiative ("Initiative") appreciates the opportunity to clarify comments made in our first submission. Our intent is to focus on two issues raised in our comments concerning the eligibility of dark fiber and the provision of dark fiber by any broadband services provider.

A wealth of knowledge about broadband deployment projects exists today that is held by a large community across the nation. Deployment of fiber is no longer a mysterious unknown but one that has been successfully accomplished by many including local and state governments, schools and libraries and health care institutions. For the last 13 years, the non-profit national and state research and education networks ("R&E networks") have deployed almost 25,000 miles of a national fiber infrastructure to over 66,000 community anchor institutions. Large school districts and metropolitan library consortiums have deployed fiber either by doing it themselves or by contracting with experts. Small, rural school districts have gained access to broadband from the R&E community where the traditional common carrier has not found it cost effective to deploy. Therefore the Initiative was surprised to see comments by our nation's major carriers that reflected a 1990's telecommunications environment. For example AT&T in their comments stated, "Thus, while AT&T agrees that schools and libraries should be able to choose from a number of options at varying price points to meet their broadband needs, authorizing funding for dark fiber or spare capacity on lit fiber is likely to be penny-wise and pound-foolish."

The following example demonstrates the abilities of a broadband provider (that is not a telecommunications carrier) to effectively deploy broadband.

*The City of Chanute, Kansas has operated a fiber optic control network since 1984 for the benefit of critical electric operations for the City's Municipal Electric Department. That original network was upgraded and expanded to form the core infrastructure facilities of the community's network in 2001. Network participants are connected to extensions of this existing core infrastructure.*

- *The community's network utilizes multiple communications technologies; including fiber optics, broadband wireless, and traditional data circuits leased from AT&T/SBC. The City and AT&T/SBC have established an excellent working relationship that is good for the community and other portions of Southeastern Kansas, and are continuing to work together toward a common goal.*

- *The network utilizes high-speed broadband wireless links to "off-network" patrons utilizing the tall structures at Ash Grove Cement to provide exceptional network reliability. Ash Grove Cement donated attachment space to support the City's communications network initiatives to serve public health and safety, education, governmental and utility purposes.*

- *All of the schools and administrative offices of USD 413 and the Neosho County Community College are connected and benefiting from the network's capabilities and high performance. City government offices and municipal utilities also utilize elements of the network.*

- *Through the efforts of the school district, community college, public library and City government, the City of Chanute created an access point to help deliver the benefits and resources of the state-wide R&E network, KAN-Ed, to the students, educators and administrators in and around Chanute. The City of Chanute serves as an aggregation point for the KAN-Ed education and medical network. The City also serves as an interconnection point for a local Internet Service Provider, Midwest Connections, which delivers KAN-Ed services through its wireless infrastructure to educational facilities outside the City of Chanute. (See diagram in Attachment One)*

- *Chanute has developed a co-location facility for educational institution use in vacated space within a retired municipal power plant, effectively extending the life of this historic building. This space allows the schools, library and college to share computing, staff and other resources maximizing the value of these entities' assets for the community. Additional co-location spaces are available to support businesses that require secure networking facilities connected to the City's network or off-site disaster recovery capabilities. <http://www.chanute.org/Business/Utilities/fiber.htm>*

This example shows how any willing broadband provider can support the recommendations in the National Broadband Plan. We strongly urge the FCC to remove barriers and silos, and give schools and libraries the flexibility under the E-rate program to obtain the most cost effective broadband. The Initiative does not underestimate the major issues and complexities faced by the FCC in regards to supporting fiber, lit or unlit, from any broadband provider. The following are some key issues to be addressed:

#### Lit versus unlit fiber

Lit and unlit fiber should be an eligible service under the E-rate program. Rules need to be established that clearly outline eligible costs including project/build-out costs, equipment, and immediate use versus excess capacity. For example, rules could require a project implementation plan with a certification from professional engineer and legally binding assurances from the applicant that costs are being claimed for only lit fiber currently in use.

Knowing the limitations of funding, project costs could be amortized over a period of years. Project costs could include fiber, engineering and labor to install, electronics to light the fiber, contracts to maintain, service and repair fiber, routing and switching equipment, and LAN upgrades to enable use of expanded capacity. Project plans should address certain elements including 1) proposed usage of excess capacity, 2) any benefits to the community, 3) sustainability of local ownership, and 4) address the subsequent reduction in the need for the applicant to draw on E-rate funds in the out-years.

A huge unknown is the volume of applicants that would undertake a fiber deployment project. By allowing schools and libraries to obtain fiber that is already lit from any broadband provider, the number of fiber-owned projects may be reduced. Therefore, schools and libraries will follow the most cost-effective recommendation of owning or leasing based upon their research.

The FCC should consider defining fiber as a telecommunication service. Under the proposed rule, dark fiber is considered "conduit to the internet". This is an example where one silo could be removed to allow schools/libraries the use of broadband according to their needs.

#### Owned versus leasing fiber

Fiber, whether leased or owned, should be an eligible service under the E-rate program. This gives schools and libraries the flexibility to select the most cost-effective solution.

Leased Fiber – Rules are needed to differentiate filing requirements for month-to-month leases versus one that is long-term, such as a 5-year lease. Long-term leases could be amortized over the life of the lease to help manage draws on E-rate funds.

Owned Fiber – Rules are needed to define ownership versus long-term lease. Contracts in the form of 10-to 20 year IRUs basically perform as ownership. FCC may want to apply different cost reimbursement rules for short-term versus long-term contracts.

*Any Broadband Services Provider*

The Initiative believes that schools and libraries need to be given the flexibility of choosing the most cost-effective, lit or unlit fiber solution from any broadband provider. In particular, the Initiative encourages the FCC to recognize R&E networks as an eligible service provider for ANY eligible service under E-rate and to develop rules by which schools/libraries can participate in shared broadband services.

In conclusion, we offer our willingness to be a resource to the FCC to assist in developing the rules that meet the needs of all parties engaged in the E-rate program.

**Contact Names:**

Louis Fox  
Director, National Internet2 K20 Initiative  
1000 Oakbrook Drive, Ste. 300  
Ann Arbor, MI 48104  
lfox@internet2.edu

Carol Willis  
Manager, Texas Education Telecommunications Network  
5701 Springdale Road  
Austin, Texas 78723  
carol.willis@esc13.txed.net

Randy Stout, R&D Coordinator, Kan-ed  
Kansas Board of Regents  
1000 SW Jackson Street, Suite 520  
Topeka, Kansas 66612-1368  
rstout@ksbor.org

Kim Breuninger, Educational Technology Programs Coordinator  
Chester County Intermediate Unit  
455 Boot Road  
Downingtown, Pennsylvania 19335  
kimb@cciu.org

Kim Owen, Advanced Applications Coordinator  
North Dakota State University  
1320 Albrecht Blvd  
Fargo, ND 58105  
kim.owen@ndsu.edu

Larry Gallery, Manager, Membership Development  
NYSERNET  
385 Jordon Road  
Troy, New York 12180  
[lgallery@nysernet.org](mailto:lgallery@nysernet.org)

